IN THE CLAIMS

Please amend the claims as follows:

Claims 1-21 (Canceled).

Claim 22 (New): A method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device, the method comprising:

providing an intermediate wave converter between an opening and a two-dimensional image pick-up device, the intermediate wave converter being for converting a wave into a detectable wave that the two-dimensional image pick-up device can detect;

converting an image formed from a wave coming from the opening into a detectable wave with the intermediate wave converter;

catching and picking up an image of the detectable wave with the two-dimensional image pick-up device;

calibrating distortion of the picked-up image of the detectable wave with a computer on the basis of a one-to-one function between a coordinate on a wave-converting surface of the intermediate wave converter and a coordinate on a light-sensitive surface of the two-dimensional image pick-up device; and

outputting a distortion-free image.

Claim 23 (New): The method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to Claim 22, wherein the intermediate wave converter comprises a wave-converting surface having a

calibration grid pattern, and distortion of the image on the wave-converting surface is calibrated using information of the calibration grid pattern.

Claim 24 (New): The method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to Claim 23, wherein the number of squares of the calibration grid pattern corresponds to the spatial resolution required for applications.

Claim 25 (New): The method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to Claim 23, wherein the diameter of the opening is large, and the distance between the opening and the image-forming surface of the intermediate wave converter is long in comparison with a diameter of the intermediate wave converter to achieve an optimum resolution.

Claim 26 (New): The method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to Claim 23, wherein the diameter of the opening is small, and the distance between the opening and the image-forming surface of the intermediate wave converter is short in comparison with a diameter of the intermediate wave converter to achieve an optimum resolution.

Claim 27 (New): The method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to Claim 23, wherein wave-detecting elements are placed at grid points of the calibration grid pattern of the intermediate wave converter so that the intermediate wave converter itself serves as a two-dimensional image pick-up device.

Claim 28 (New): The method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to claim 22, wherein an X-ray or a gamma ray is used as the electromagnetic wave coming from the opening, the diameter of the opening is large, and the distance between the opening and the image-forming surface of the intermediate wave converter is long in comparison with a diameter of the intermediate wave converter to achieve an optimum resolution.

Claim 29 (New): The method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to claim 24, wherein an X-ray or a gamma ray is used as the electromagnetic wave coming from the opening, the diameter of the opening is large, and the distance between the opening and the image-forming surface of the intermediate wave converter is long in comparison with a diameter of the intermediate wave converter to achieve an optimum resolution.

Claim 30 (New): The method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to claim 22, wherein an X-ray or a gamma ray is used as the electromagnetic wave coming from the opening, the diameter of the opening is small, and the distance between the opening and the image-forming surface of the intermediate wave converter is short in comparison with a diameter of the intermediate wave converter to achieve an optimum resolution.

Claim 31 (New): The method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to claim 24, wherein an X-ray or a gamma ray is used as the electromagnetic wave coming from the

opening, the diameter of the opening is small, and the distance between the opening and the image-forming surface of the intermediate wave converter is short in comparison with a diameter of the intermediate wave converter to achieve an optimum resolution.

Claim 32 (New): A method for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device, the method comprising:

providing an intermediate wave converter between an opening provided in a shield intercepting propagation of a wave and a two-dimensional image pick-up device, the intermediate wave converter being for converting a wave into a detectable wave that the two-dimensional image pick-up device can detect;

converting an image formed from an electromagnetic wave, quantum wave, or sound wave coming from the opening into detectable wave light with the intermediate wave converter;

catching and picking up an image of the detectable wave light with the two-dimensional image pick-up device;

calibrating distortion of the picked-up image of the detectable wave with a computer on the basis of a one-to-one function between a coordinate on a wave-converting surface of the intermediate wave converter and a coordinate on a light-sensitive surface of the two-dimensional image pick-up device; and

outputting a distortion-free image.

Claim 33 (New): An apparatus for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device, the apparatus comprising:

(a) an opening provided in a shield intercepting propagation of a wave;

(b) a cylinder for integrating the opening and the two-dimensional image pick-up device for visible light, the cylinder being long so that the distance between the opening and the image-forming surface of the intermediate wave converter is long;

(c) an intermediate wave converter for converting an electromagnetic wave coming from the opening into visible light; and

(d) a two-dimensional image pick-up device for picking up an image from the converted visible light.

Claim 34 (New): An apparatus for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to Claim 33, wherein the intermediate wave converter comprises a wave-converting surface having a calibration grid pattern, and distortion of the image on the wave-converting surface is calibrated using information of the calibration grid pattern.

Claim 35 (New): The apparatus for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to Claim 33, wherein the diameter of the opening is large, and the cylinder is long so that the distance between the opening and the image-forming surface of the intermediate wave converter is long to achieve an optimum resolution.

Claim 36 (New): The apparatus for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to Claim 33, wherein an X-ray or a gamma ray is used as the electromagnetic wave coming from the opening, the diameter of the opening is small, and the cylinder is short so that the distance

between the opening and the image-forming surface of the intermediate wave converter is short to achieve an optimum resolution.

Claim 37 (New): The apparatus for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device according to Claim 33, wherein distortion caused by a spatial image-forming system and lens image-forming system is automatically corrected by the computer using the calibration grid pattern of the wave-converting surface, and a distortion-free signal is output from the two-dimensional image pick-up device.

Claim 38 (New): An apparatus for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device, the apparatus comprising:

(a) an opening provided in a shield intercepting propagation of a wave;

(b) a cylinder for integrating the opening and the two-dimensional image pick-up device for visible light, the cylinder being short so that the distance between the opening and the image-forming surface of the intermediate wave converter is short;

(c) an intermediate wave converter for converting an electromagnetic wave coming from the opening into visible light; and

(d) a two-dimensional image pick-up device for picking up an image from the converted visible light.

Claim 39 (New): An apparatus for forming and picking up an image by using a combination of an opening and a two-dimensional image pick-up device, the apparatus comprising:

(a) an opening provided in a shield intercepting propagation of a wave;

(b) a cylinder in which the opening is formed;

(c) an intermediate wave converter for converting an electromagnetic wave coming from the opening into visible light;

(d) a two-dimensional image pick-up device for picking up an image from the converted visible light; and.

(e) means for calibrating distortion of the image picked up by the two-dimensional image pick-up device with a computer on the basis of a one-to-one function between a coordinate on a wave-converting surface of the intermediate wave converter and a coordinate on a light-sensitive surface of the two-dimensional image pick-up device.